Rutt Etra 4 Prototype
documented Spring and Summer 2008

PC-101 --- slot 1
1 nc
2 gnd
3 gnd
4 v+13.4
5 v-17.8
6 nc
7 nc
8 to pin 4 of both 'Modules' Amphenol connectors; to pin 11 of slot 2
9 to pin 10 of slot 2
10 to pin 9 of slot 9
11 nc
12 shorted to 13; 300 ohm resistor to pin 14
13 shorted to 12
14 300 ohm resistor to pin 12; to pin 2 of 'Sectioning' rotary switch
15 IN from Vertical Center Bias DG172CJ chip (top pin)
16 nc
17 Vert Sweep Out - goes to top center of 0deg /90 deg switch
18 nc
19 nc
20 nc
21 nc
22 to pin 6 of slot 2

PC-102 --- slot 2
1 nc
2 gnd
3 gnd
4 V+13.4
5 v-17.8
from pin 22 of slot 1; to top of "Alt. Line" switch in 'Sectioning';
6 to pin 8 of 2 'Modules' amphenol connectors
7 to V-Lock LED
to terminal strip (tab 5 from front) and resistor which is in series to base of transistor- collector of transistor goes to slot 8 pin 5 - emitter of transistor goes to top left of both Video Level sliders and bottom of
8 'Raster' switch
9 to H-Lock LED
10 from pin 9 of slot 1; to 's' of 'Scan Rate' switch
to pin 8 of slot 1; to bottom of Alt. Line switch in 'Sectioning'
11 and OUTput of 'Sectioning'
12 to center "Int/Ext H Sync" switch
13 to center of "Int/Ext V Sync" switch
14 nc
15 nc

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16 nc
17 nc
18 to pin 1 of "Sectioning" rotary switch
    was reconnected by Matt/Benton to pin on sectioning/switching/
19 multiplexing card (the card with the DG172CJ chips on it)
20 to wiper of "Sectioning" pot
21 to center (?) of "Sectioning" rotary switch
22 to center of "Alt. Line" switch
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    Height Width Multiplier --- slot 3 (was a PC-53)
 1 v+13.4
 2 gnd
 3 gnd
 4 v-13.2
 5 nc
 6 nc
 7 nc
 8 nc
 9 nc
10 nc
11 nc
12 nc
13 nc
14 nc
    Y IN  - From Top 0deg of  0/90 deg switch
15 (Vert Sweep in at 0degrees)(was jmp to 16)
16 Height Multiplier OUT (to pin 15 of slot 5)(was jmp to 15)
17 X IN - Height summing out (from pin 5 slot 4)  (inverted from panel)
18 nc
19 nc
    Y IN - From Bottom 0deg of 0/90 deg switch
20 (Horiz Sweep in at 0 degrees)(was jmp to 21)
21 Width multiplier out (to pin 20 of slot 5)(was jmp to 20)
22 X IN  - With summing out (from pin 22 of slot 4)
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    PC-52 --- slot 4
 1 v+13.4
 2 gnd
 3 gnd
 4 v-13.2
 5 Height Summing OUT (inverted)
 6 OUTput from #2 (bottom row, counting from left) DG172CJ sectioning chip
 7 nc
 8 nc
 9 nc
10 nc
11 nc
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 12 nc
 13 OUT from #3 (bottom row, counting from left) DG172CJ sectioning chip
 14 OUT from #5 (bottom row, counting from left) DG172CJ sectioning chip
 15 nc
 16 nc
 17 nc
 18 nc
 19 nc
 20 nc
 21 OUT from #4 (bottom row, counting from left) DG172CJ sectioning chip
 22 Width Summing Out (inverted)
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```
      Depth Multiplier --- slot 5 (was a PC-53)
  1 v+13.4
  2 gnd
  3 gnd
  4 v-13.2
  5 nc
  6 nc
  7 nc
  8 nc
  9 nc
 10 nc
 11 nc
 12 nc
 13 nc
 14 nc
 15 Y IN - from Height Multiplied IN (from pin 16 of slot 3)
 16 Depth Multiplier OUT (to pin 8 slot 7)
 17 X IN Depth summing out (non inverted) (from pin 22 of slot 6)
 18 nc
 19 nc
 20 Y IN - Width Multiplied IN (from pin 21 of slot 3)
 21 Depth Multiplier OUT (to pin 19 of slot 7)
 22 X IN Depth summing out (non inverted) (from pin 22 of slot 6)
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      Depth --- slot 6 (PC-52)
  1 v+13.4
  2 gnd
  3 gnd
  4 v-13.2
  5 OUT to pin 18 IN
  6 from #6 (bottom row, from left)  DG172CJ sectioning chip
  7 nc
  8 nc
  9 nc
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10 nc
11 nc
12 nc
   from middle row, 5th from left  DG172CJ sectioning chip
13 *middle row 'OUT' is bottom pin. Bottom row, 'OUT' is top pin
14 nc
15 nc
16 nc
17 nc
18 IN from pin 5
19 nc
20 nc
21 nc
22 X Depth Summing OUT to pin 17 and 22 of slot 5
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```
   Vertical --- slot 7 (PC-52)
 1 v+13.4
 2 gnd
 3 gnd
 4 v-13.2
 5 through 300 Ohm resistor on pin 8 of 'To Display' Amphenol connector
 6 from middle row, 4th from left cluster of  DG172CJ sectioning chips
 7 nc
 8 from pin 16 Multiplier OUT
 9 nc
10 nc
11 nc
12 nc
13 from middle row, 3rd from left DG172CJ sectioning chip
14 from middle row, 1st from left  DG172CJ sectioning chip
15 nc
16 nc
17 nc
18 nc
19 from pin 21 of slot 5 Multiplier
20 nc
21 from middle  row, 2nd from left  DG172CJ sectioning chip

   summing OUTput to 300 Ohm resistor on pin 4 of "To Display" Amphenol
22  connector
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```
   Intensity --- slot 8 (PC-52)
 1 v+13.4 (power fed from terminal strip)
 2 gnd
 3 gnd
 4 v-13.2 (power fed from terminal strip)
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 5 to collector of transistor on terminal strip (tab 1 from front)
 6 nc
 7 nc
 8 nc
 9 jumper to pin 22 same board
10 nc
11 nc
12 nc
13 nc
   from top row, second from right most DG172CJ sectioning chip
14 (top pin)
15 nc
16 nc
17 nc
18 nc
19 nc
20 nc
   from top row, right most DG172CJ sectioning chip
21 (top pin)
22 jumper to pin 9 same board
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```
   unlabeled --- slot 9 (PC-52)
 1 v+13.4
 2 gnd
 3 gnd
 4 v-13.2
 5 jumper to 18 same board
 6 nc
 7 nc
   from top row left most DG172CJ sectioning chip
 8 (top pin)
 9 from pin 10 of slot 1
10 nc
11 nc
12 nc
   from top row second from left most DG172CJ sectioning chip
13 (top pin)
14 nc
15 nc
16 nc
17 nc
18 jumper to 5 same board
19 nc
20 nc
21 nc
22 bottom center of 0/90 degree switch
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